

**Notice of Allowability**

Application No.

10/529,282

Examiner

Cindy D. Khuu

Applicant(s)

AOKI, KEIICHIRO

Art Unit

2863

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/15/06.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 5. <input type="checkbox"/> Notice of Informal Patent Application                     |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

## DETAILED ACTION

### *Pertinent Art Cited*

The following US Patent Applications reveal the current state of the art:

Ikeda et al. (US 6,304,813) teach of an exhaust gas sensor control device (100) for an exhaust gas sensor that is mounted in an exhaust path of an internal combustion engine (Fig. 9), wherein said exhaust gas sensor (1) includes a sensor element (2) that becomes active when an activity temperature is reached (Column 5, lines 7-10), the exhaust gas sensor control device (100) comprising:

an impedance detection device for detecting an element impedance of said sensor element (Column 7, lines 44-53);

an impedance judgment device for judging whether said element impedance is lowered to an activity judgment value (Fig. 7; Column 7, lines 44-53);

a received heat amount estimation device for estimating the amount of heat received by said sensor element (Claim 1, lines 7-8);

a heat amount judgment device for judging whether an activity judgment heat amount is reached by said amount of heat received (Fig. 7; Column 8, lines 10-13); and

an activity judgment device for formulating an activity judgment of said exhaust gas sensor when an affirmative judgment is executed either by said impedance judgment device or by said heat amount judgment device (Column 4, lines 50-58).

However, Ikeda does not teach at least a received heat amount estimation device for estimating an amount of heat received by said sensor element based on one or more operational parameters related to operation of the internal combustion engine other than said element impedance of said sensor element; and a heat amount judgment device for judging whether an activity judgment heat amount is reached in said sensor element based on the amount of heat received by said sensor element.

***Allowable Subject Matter***

Claims 1-11 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claims 1 and 11 is the inclusion of the limitation "estimating an amount of heat received by said sensor element based on one or more operational parameters related to operation of the internal combustion engine other than said element impedance of said sensor element; and judging whether an activity judgment heat amount is reached in said sensor element based on the amount of heat received by said sensor element". The prior art of record, taken alone or in combination, fails to disclose or render obvious.

Claims 2-10 are allowed due to their dependency on claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Fax/Telephone Information***

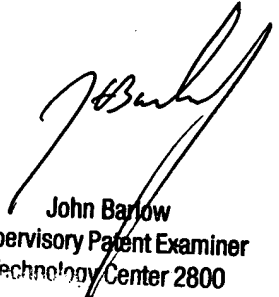
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy D. Khuu whose telephone number is (571) 272-8585. The examiner can normally be reached on M-F, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cuu 1/18/07

  
John Barlow  
Supervisory Patent Examiner  
Technology Center 2800